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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,826	12/07/2001	Tomohiko Ito	Q66566	7762

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EXAMINER

THOMPSON, JAMES A

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2625

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/004,826	Applicant(s) ITO, TOMOHIKO	
	Examiner James A. Thompson	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 6, lines 3-11, filed 24 October 2007, with respect to the rejections under 35 U.S.C. § 112, first paragraph have been fully considered and are persuasive. The rejections under 35 U.S.C. § 112, first paragraph set forth in items 2-3 of the previous office action, mailed 24 July 2007, has been withdrawn.

2. Applicant's arguments filed 24 October 2007 have been fully considered but they are not persuasive.

Regarding page 6, line 13 to page 8, line 3: By combining Matsubara (USPN 5,712,666) and Jansen (USPN 6,108,436), the system of Matsubara uses a detection means according to the teachings of Jansen. While Jansen uses its detection means in the context of a web printing apparatus, the same type of detection means can be used in the system of Matsubara, albeit in a physical scale appropriate to the system of Matsubara. Matsubara teaches that there is a detection means (figure 15(112-119,125) and column 16, lines 12-17 of Matsubara). While this detection means is not in the same form as the detection means taught by Jansen, this is not a "teaching away" from Jansen. Matsubara and Jansen simply teach different types of detection means. Matsubara does not teach or suggest that a detection means which is fixedly positioned in relation to said image recording apparatus, such as taught by Jansen, would be inappropriate for the system of Matsubara. Further, such a detection means would not be inappropriate in the context of the system of Matsubara. The system of Matsubara would merely be modified so as to perform the detection by detecting marks that appear in the viewing area of a fixed position detection means. Thus, registration and other forms of correction would be performed based on marks made in particular locations for the purpose of printing correction. As stated in the previous office action, this would result in a simpler, faster and cheaper means of print correction. Thus, the combination of Matsubara and Jansen is appropriate and renders claim 1 obvious to one of ordinary skill in the art at the time of the invention.

Regarding page 8, line 4 to page 9, line 3: The portion of Matsubara cited by Examiner specifically states that the "ink is ejected *as the recording head 34 moves in the X direction*, thereby, the whole face of the recording paper can be recorded" [column 12, lines 65-67 of Matsubara] [emphasis added]. While this is done line-by-line, it still reads on the claim limitations since the entire process of moving the recording paper in the Y direction is on-going while the recording paper is printed. The

printing by moving the recording head in the X direction and the conveyance of the recording paper in the Y direction are both on-going processes and thus read upon the specifically recited language "wherein said image is recorded two-dimensionally on said recording medium by said conveyance means conveying said recording medium in said conveyance direction as said image drafting means drafts said line form image". Both the drafting of the line form image and the conveying of the recording paper are occurring within the same time frame, and thus the conveying can be considered to be occurring as the drafting is occurring.

Since claim 1 is shown to be rendered obvious over the cited prior art, claims 2-6, 8-9 and 12-15 cannot therefore be deemed allowable merely due to their respective dependencies.

Regarding page 9, lines 4-10: Since claim 1 is shown to be rendered obvious over the cited prior art, claims 7 and 10-11 cannot therefore be deemed allowable merely due to their respective dependencies.

Conclusion: The prior art rejections are maintained and the present action is made final. The present amendments to the claims are addressed by the prior art rejections below and have necessitated any new grounds of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-6, 8-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara (US Patent 5,712,666) in view of Jansen (US Patent 6,108,436).**

Regarding claim 1: Matsubara discloses an image recording apparatus (figure 44 and column 11, lines 53-55 of Matsubara) comprising an image drafting means (figure 7(34) of Matsubara) that drafts a line form image on a portion of a recording medium (column 12, lines 60-67 of Matsubara); a conveyance means ("driving means") that conveys said recording medium in a direction (Y direction) substantially perpendicular to the lengthwise direction (X direction) of said drafted line form image (column 12, lines 60-67 of Matsubara), wherein said image is recorded two-dimensionally on said

recording medium by said conveyance means conveying said recording medium in said conveyance direction as said image drafting means drafts said line form image (figure 10 and column 12, lines 65-67 of Matsubara); and a detection means (figure 15(112-119,125) and column 16, lines 12-17 of Matsubara).

Matsubara does not disclose expressly that said detection means is fixedly positioned in relation to said image recording apparatus.

Jansen discloses a detection means (figure 3(12) and column 3, lines 37-44 of Jansen) fixedly positioned in relation to the image recording apparatus (figure 3(20); column 3, lines 48-50; and column 5, lines 5-11 and lines 35-40 of Jansen – The detection means only detects marks that appear within the viewing area. The marks are printed at a specific locations outside the area of the printed image. Thus, the detection means is fixedly positioned).

Matsubara and Jansen are combinable because they are from the same field of endeavor, namely the calibration of print image data in a continuous printing system. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a fixed-position detection means, as taught by Jansen. The motivation for doing so would have been to provide a simpler, faster, and cheaper means of print correction in a continuous printing system (column 2, lines 16-31 of Jansen). Therefore, it would have been obvious to combine Jansen with Matsubara to obtain the invention as specified in claim 1.

Regarding claim 2: Matsubara discloses that said image drafting means as well as said conveyance means are provided within a housing (figure 44 and column 28, lines 41-43 of Matsubara), and an opening is provided in said housing in the vicinity of the aforementioned conveyance means, extending in said conveyance direction (figure 44(1009) of Matsubara). Figure 44 of Matsubara shows a typical opening for a printer (figure 4(1009) of Matsubara) where the printed paper is ejected, and is thus in the vicinity of the aforementioned conveyance means, extending in said conveyance direction.

Regarding claims 3 and 4: Matsubara discloses that said image drafting means is a thermal head (figure 17a(232) and column 17, line 65 to column 18, line 3 of Matsubara).

Regarding claims 5/1-5/4: Matsubara discloses that said conveyance means is capable of varying the conveyance speed of said recording medium (column 16, lines 1-11 of Matsubara). The distance, and thus the speed, of the recording medium depends upon the number of nozzles switched on. Thus, for a greater reduction in the number of nozzles used in the recording head, the slower the conveyance speed.

Regarding claims 6/1-6/4: Matsubara discloses recording a density pattern for shading correction on a recording medium (figure 10 and column 13, lines 34-42 of Matsubara); obtaining said recording medium on which said density pattern for shading correction has been recorded (column 13,

line 65 to column 14, line 2 and column 14, lines 10-12 of Matsubara); conveying said recording medium having said density pattern recorded thereon in a direction that substantially matches the lengthwise direction of said density pattern (Y direction) (column 12, lines 60-67 of Matsubara); detecting said density pattern by a detection means (column 14, lines 10-14 of Matsubara); and obtaining shading correction data based on the detection result of said detection means (figure 9(S53) and column 14, lines 23-25 of Matsubara).

Regarding claim 8: Matsubara discloses providing a recording medium for recording an image (column 13, lines 34-38 of Matsubara); recording a density pattern on said recording medium (figure 10 and column 13, lines 34-42 of Matsubara); conveying said recording medium to move said density pattern (column 12, lines 60-67 of Matsubara) by the detecting means (figure 15 (112-119,125) and column 13, line 66 to column 14, line 5 of Matsubara); and detecting said density pattern with said detecting means (column 14, lines 10-14 of Matsubara) to obtain shading correction data (column 14, lines 23-25 of Matsubara).

Regarding claim 9: Matsubara discloses conveying said recording medium by a printer head to record an image on said recording medium corrected by the obtained shading correction data (column 13, line 66 to column 14, line 9 of Matsubara).

Regarding claim 12: Matsubara discloses that the recording medium is conveyed in a first direction for detecting said density pattern which is different than a second direction in which said recording medium is conveyed when said image is recorded (column 14, lines 2-7 of Matsubara). The test pattern is positioned such that it is read at right angles to the direction in which it was recorded (column 14, lines 2-7 of Matsubara). Thus, when said recording medium is read, said recording medium is conveyed at a direction perpendicular to that which said recording medium was conveyed when the test pattern was printed.

5. Claims 7 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara (US Patent 5,712,666) in view of Jansen (US Patent 6,108,436) and Rolleston (US Patent 5,416,613).

Regarding claim 7: Matsubara discloses recording a density pattern for shading correction on a recording medium (figure 10 and column 13, lines 34-42 of Matsubara); obtaining said recording medium on which said density pattern for shading correction has been recorded (column 13, line 65 to column 14, line 2 and column 14, lines 10-12 of Matsubara); conveying said recording medium having said density pattern recorded thereon in a direction that substantially matches the lengthwise direction of said density

pattern (Y direction) (column 12, lines 60-67 of Matsubara); detecting said density pattern by a detection means (column 14, lines 10-14 of Matsubara); obtaining shading correction data based on the detection result of said detection means (figure 9(S53) and column 14, lines 23-25 of Matsubara); and varying the conveyance speed of said recording medium (column 16, lines 1-11 of Matsubara). The distance, and thus the speed, of the recording medium depends upon the number of nozzles switched on. Thus, for a greater reduction in the number of nozzles used in the recording head, the slower the conveyance speed.

Matsubara in view of Jansen does not disclose expressly that said step of conveying is performed at a speed slower than the speed at which said density pattern was recorded.

Rolleston discloses that, after a large plurality (column 5, lines 50-59 of Rolleston) of color correction patches are printed (figure 2 and column 5, lines 39-50 of Rolleston), said color correction patches are carefully and individually read by a densitometer to generate a three-dimensional look-up table (column 5, lines 62-67 of Rolleston). Thus, the reading of said color correction patches is clearly a slower operation than the printing of said color correction patches.

Matsubara in view of Jansen is combinable with Rolleston because they are from the same field of endeavor, namely color and shading correction of printed digital image data through printing and scanning a plurality of test patches. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to carefully scan the printed correction patches with a densitometer, as taught by Rolleston. Thus, the scanning would be performed more slowly than the printing, so the step of conveying taught by Matsubara is performed at a speed slower than the speed at which said density pattern was recorded. The motivation for doing so would have been to provide for high accuracy measuring of colorimetric response (column 2, line 64 to column 3, line 4 of Rolleston). Furthermore, by performing high accuracy colorimetric measurements over the whole recording medium, color variations that are caused by spatial non-uniformities can be corrected, rather than falsely assuming that color variations are due to color space non-uniformities, thus improving the overall response of the printer (column 3, lines 4-15 of Rolleston). Therefore, it would have been obvious to combine Rolleston with Matsubara in view of Jansen to obtain the invention as specified in claim 7.

Regarding claims 10-11: Matsubara discloses varying the conveyance speed of said recording medium (column 16, lines 1-11 of Matsubara). The distance, and thus the speed, of the recording medium depends upon the number of nozzles switched on. Thus, for a greater reduction in the number of nozzles used in the recording head, the slower the conveyance speed.

Matsubara in view of Jansen does not disclose expressly that said recording medium is conveyed at a first speed when said density pattern is being detected and a second speed when said image is recorded, wherein a said first speed is slower than said second speed.

Rolleston discloses that, after a large plurality (column 5, lines 50-59 of Rolleston) of color correction patches are printed (figure 2 and column 5, lines 39-50 of Rolleston), said color correction patches are carefully and individually read by a densitometer to generate a three-dimensional look-up table (column 5, lines 62-67 of Rolleston). Thus, the reading of said color correction patches is clearly a slower operation than the printing of said color correction patches.

Matsubara in view of Jansen is combinable with Rolleston because they are from the same field of endeavor, namely color and shading correction of printed digital image data through printing and scanning a plurality of test patches. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to carefully scan the printed correction patches with a densitometer, as taught by Rolleston. Thus, the scanning would be performed more slowly than the printing, so said recording medium would be conveyed, as taught by Matsubara, at a first speed when said density pattern is being detected and a second speed when said image is recorded, wherein a said first speed is slower than said second speed, as taught by Rolleston. The motivation for doing so would have been to provide for high accuracy measuring of colorimetric response (column 2, line 64 to column 3, line 4 of Rolleston). Furthermore, by performing high accuracy colorimetric measurements over the whole recording medium, color variations that are caused by spatial non-uniformities can be corrected, rather than falsely assuming that color variations are due to color space non-uniformities, thus improving the overall response of the printer (column 3, lines 4-15 of Rolleston). Therefore, it would have been obvious to combine Rolleston with Matsubara in view of Jansen to obtain the invention as specified in claims 10-11.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action

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is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James A. Thompson
Examiner
Technology Division 2625

09 January 2008



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